

about 1782.

~~703~~
~~703~~

Dear Sir

R. W. Watson

Mr Herschel was half an hour with his Majesty on ~~Friday~~ ^{Saturday} morning last. The conversation roll'd chiefly on Astronomy & Music. The King ^{directed} ~~recommended~~ the Telescope should be put up at Kew, but as he should not be there in less than three weeks - he recommended that it might be put up in the mean time at Greenwich - He gave Mr Herschel no hint respecting his ~~success~~ succeeding the late Dr Demainbray - but invited him to come as often as he pleased to his private evening concerts -

Mr H. took his Telescope on Saturday to Greenwich - He had dined on Friday wth Col Walsh - Dr Maskelyne & Mr Aubert were there, They both very openly acknowledged the great obligation Astronomy was under to him for his

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observations on the double Stars, & for
his teaching them the use of high
powers —

As you have been so good as to
interest yourself so much in Mr
Herschel's favour, I thought it
proper to inform you what had
passed — I had indeed written
to you on Saturday — but the
messenger lost the Letter —

I am Sir

Your most obedient
& humble Serv^t

W Watson

London
Monday —

Sir W^m Watson; son of the foregoing — "Bottle Blue Shark",
See Banksian Catalogue.

An Account of a treatise of W^m Brownrigg M.D. F.R.S., intitled
the Art of Making common Salt, as now practised in most
parts of the world, with several improvements proposed in
that art, for the use of the British dominions, by
+ W^m Watson F.R.S.

Gentlemen,

I received your commands to lay before you an extract
of our worthy brother W^m Brownrigg's book; which, though
at all times ready to execute whatever you think proper to
charge me with to the utmost of my abilities I engaged in
the more readily, from the pleasure & ^{instruction} ~~rejoicing~~ I had
already received from the perusal of that excellent
work, in which its author has eminently distinguished
himself both ^{as} a chemist & ^{as} a philosopher.

This work consists of 295 pages in octavo exclusive of the preface,
& of 6 copper plates exhibiting different views of saltworks,
instruments &c. necessary to the preparation of salt. It
is enriched likewise ^{with} ~~and~~ notes of great importance to the work,
not only of the author, but also from the Philosophical
transactions, Medical essays, Memoirs of the royal academy
of Sciences at Paris, De Shaw, Pliny, Agricola, Alonso
Barba, Ramusio, Boyle, Hoffman, Lister, Herrera,
Dampier, Baccius, Comet, Marfili, Plot, Scheuchzer,
Hales, Rastel, Leigh, Boerhaave, & others.

Amongst the vulgar arts, that of preparing sea salt
for the uses of mankind hath been thought worthy the
notice of many great & learned men as well ancient as
modern. Thus, many things relating to this art, are recorded
by Plato & Pliny, Agricola & Hoffman, to whom our author is
much indebted for those memoirs, that have been transmitted to
us, relating to its history. Had those great men been as
diligent in improving this art, as they were in recording the
improvements made therein by others, there would not now have
been occasion to remark, that, after the practice of so many ages,

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an art so simple, & without so necessary, hath not yet been brought to any degree of perfection.

That this art was capable of great improvements, especially as practised in Great Britain, was the sentiment of this Society soon after its institution; at which time the members thereof were every intent upon bringing it to a greater perfection; as may be gathered from the inquiries & suggestions of Dr Beal, & the histories of several methods of making Salt, which then were published by the Society. And although the English have since that time considerably improved their method of boiling Salt; yet this art is still practised with greater skill & success by the Dutch, as the superior goodness of the fish cured with their Salt, doth sufficiently prove.

The commons of Great Britain, having taken into consideration the great importance of this art, judged some improvements proposed therein worthy their regard & encouragement, well knowing, that could this be brought to the same perfection in Britain as in some neighbouring countries, large sums of money might be saved in the Nation, which are now paid to the French & others; its fisheries improved; & its navies & commerce & many of its richest colonies would no longer depend upon its enemies for one of those necessities, without which they cannot be supported.

These considerations have induced our author to give a brief account of the various methods of making Salt, which are now used in Great Britain, & in other countries, where this art is practised with more success; & also to attempt several further improvements for the use of the British dominions. How far he has succeeded in these attempts will best appear, if the public shall think the following proposals so far worthy their attention as to merit a fair & impartial trial. The principal conclusions, deduced from a variety of observations & experiments are as follows: first, that by the methods

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here proposed, an excellent bay salt may be made in Britain in
very large quantities, so as to be afforded cheaper than at the
prices paid for foreign Salt; & that the British colonies in
America may very commodiously be supplied with bay salt
of their own manufacture, without having recourse for
it to the French, Spaniards, & Portuguese. Secondly,
that, by the methods here proposed an excellent kind of
refined white salt may be made in Britain, as well from
sea water & rock salt, as from natural brine, in any
quantity wanted, so as to be afforded cheaper than foreign
bay salt; & which will also be better for curing fish, flesh,
and other provisions.

In forming these conclusions ^{impartial} ~~unprejudiced~~ regard has been
had to truth, ~~and the public utility~~ without attending to the
private advantages of any particular set of men. The sense
of this, together with a desire of promoting the public
advantage has induced our author to communicate
the following sheets at this time, although by deferring the
publication some time longer he might have made them
possibly more accurate; because, besides other considerations
of no small import, an opinion has prevailed, that the
establishing of fisheries in the north of Scotland would be
the best means of affording an useful employment to
more uncivilized inhabitants of that part of the kingdom,
for carrying on of which they are most commodiously
situated.

What Dr Lowndes* hath lately done towards the improvement
of brine salt, may, perhaps by some, be thought to supersede
the necessity of further attempts for improving & extending
our salt manufacture. Dr Brownrigg is very far from
depreciating the endeavours of that gentleman, which have
met with parliamentary encouragement; & had his discovery
appeared to the Doctor sufficiently complete and extensive, he
should not have given the public & himself this trouble. He
makes no doubt but that the specimen of salt, which Dr Lowndes
* Dr Lowndes's process is inserted in this work. See p. 104 & seq.

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exhibited before the college of Physicians was a strong & pure
salt, since such it appeared to that most learned body. Whether
the alum mixed with it (agreeable to ~~the expectations~~ the ancient
practice of the Cheshire salt boilers) contributed any thing to
its goodness, ~~will~~ is more properly consider'd hereafter. It is
only necessary here to observe in justification of the present
undertaking, that Dr Lowndes's method, of making salt
for curing provisions, doth not appear to be the best that
may be put in practice; since our author hopes to show, that
by other methods a purer & a stronger salt may be made, at
a less expence. Neither is his method so general & extensive as
seems to be required for the public good; since Dr Lowndes
confines it almost entirely to boiled brine salt; & hath given
no directions concerning the preparation of bay salt. He
indeed proposes to meliorate the British sea salt, but seems
to despair of preparing a salt either from seawater, or
English rock-salt, fit for the uses of the navy or fisheries;
although the Dutch salt, which is the strongest & purest
boiled salt now made, is entirely a marine salt, & even
the brine, of which Dr Lowndes makes his salt, is only a
solution of the English rock-salt, often in ^{very} impure water, as
is well known to the naturalists.

Our author treating of salt in general, takes notice of the
excellence & usefulness thereof; & that it hath pleased the
author of nature to provide mankind therewith in such
quantities, that there are few countries which do not afford
vast quantities of rock or fossil salt. Mines of it have
been long discovered & wrought in England, Spain, Italy,
Germany, Hungary, Poland, & other countries in
Europe. Moreover, the sea affords such vast plenty thereof,
that all mankind might thence be supplied with quantities
sufficient for their occasions. There are also innumerable springs,
ponds, & lakes, & rivers impregnated with common salt, from
which the inhabitants of many countries are plentifully
supplied herewith.

[These several kinds of common salt often differ from each other in their outward form & appearance, or in such accidental properties as they derive from the heterogeneous substances with which they are mixed. But when perfectly pure, they have all the same qualities; so that chemists, by the exactest inquiries, have not been able to discover any essential difference between them. In this our Author agrees with the celebrated Hoffman.]

Note

* Hoffman de Salinis Hallenf. Cap. VII.

Uti igitur nostra hac de re innotescat sententia, hanc interponimus: Sicuti in tota universi hujus orbis compage, una tantum est aqua, unus per fermentationem paratus spiritus ardens, unus mercurius, unum volatile sal, unum acidum vitrosum ac vitriolicum sal; ita, pari ratione unum idemque sal commune est. Sed quum plures alieno, terreo, lapideo, sulphureo, calcario minerales ac pingues particulo cum pice corporibus conubium ineant, diversa exinde emergit eorum indoles; et sal commune idem semper obtineret ingenium, si quis pingues, terreas, calcareasque partes ab illo artificiose segregaret.

In some countries, which are remote from the sea, & have little⁵ commerce, & which are not blessed with mines of salt, or salt waters; the necessities of the inhabitants have forced them to invent a method of extracting their common salt from the ashes of vegetables.

In short, this salt is dispersed all over nature; it is treasured up in the bowels of the earth; it impregnates the ocean; it descends in rains, it fertilises the soil; it arises in vegetables, & from them is conveyed into animals. So that it may well be esteemed the universal condiment of nature.

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Naturalists, observing the great variety of forms under which this salt appears, have thought fit to rank the several kinds of it under certain general classes, distinguishing it most usually into rock or fossil salt, sea salt, & brine or fountain salt: to which may be added others of those muriatic salts, which are found in vegetable or animal substances. ~~But~~ ^{therefore} leaving these divisions to those, whom they may concern; it may for the present purpose be more proper to distinguish common salt after a different manner into the three following kinds, viz. into rock ^{or native} salt, bay salt, & white salt.

By rock salt or native salt, is understood all salt dug out of the earth, which hath not undergone any artificial preparation.

Under the title of bay salt may be ranked all kinds of common salt extracted from the water, wherein it is dissolved by means of the sun's heat, & the operation of the air. Whether the water, from which it is extracted, be sea water, or natural brine drawn from wells and springs, or salt water stagnating in ponds & lakes.

Under the title of white salt, or boiled salt, may be included all kinds of common salt extracted by coction from the water wherein it was dissolved; whether this water be sea water, or the salt water of wells, fountains, lakes, or rivers; or water of any sort impregnated with rock salt, or other kinds of common salt.

* See Boyle on the saltiness of the sea.

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The first of these kinds of Salt is in several countries found so pure, that it serves for most domestic uses, without any previous preparation, but is excepted. But the English Solar Salt is unfit for the uses of the kitchen, until, by solution & coction it is freed from several impurities, & reduced to white Salt. The British white salt also is not so proper as several kinds of bay salt for curing fish, & such flesh & meats as are intended for ~~exportation~~ sea provisions or for exportation into hot countries. So that for these purposes we are obliged, either wholly or in part, to use bay salt, which we purchase in France, Spain, & other foreign countries. To remedy these inconveniences this treatise was wrote, in order to shew how the subjects of Great Britain may be supplied with salt of their own manufacture, fit & sufficient for all their occasions. In order that the method here proposed might be better understood, & that the reasonableness of them might more fully appear, the author thought it necessary to premise a brief account of the several ~~various~~ ways of preparing bay salt as well as white salt as far as they came to his knowledge. From this history may be formed a judgement, how far the methods now in use are ~~necessary~~ proper, in what deficient, & where erroneous, & how they may be improved.

Bay salt in general may be divided into two kinds. First, bay salt drawn from sea water, as is practised in France, Spain, Portugal, & many other countries. Secondly, bay salt extracted from salt springs, ponds, & lakes, as at Cape de Verde island, Tortuga & other places. Of these the first is imported in large quantities into Great Britain & Ireland: our american colonies in times of peace are chiefly supplied with the latter, but in time of ^{war} ~~peace~~ they have large quantities of bay salt from Lisbon, & other parts of Portugal.

Bay salt is prepared in a manner the most simple & easy, when the water of ponds & lakes impregnated with salt is totally exhaled by the force of the sun & ~~wind~~ air, & the salt is left

concreted into a hard crust at the bottom of the lake or pond. of salt thus prepared we have instances in many parts of the world, as in the Sodan desert near the river Borjflones on the Russian frontiers towards Sin Tartary, in the kingdom of Algiers, & in other parts of the world.

Bay salt is also drawn from the brine of ponds & lakes, & ~~which~~ our author gives us an account of the preparing it in this manner in the Sage de Verd islands. This account was collected chiefly from the relations of several persons of credit, who themselves assisted in making salt in these islands. He also takes notice of ^{the} Bay salt made at Fortugas & other places in America. He describes likewise the manner of making marine bay salt in France & other parts of Europe. For the particulars of these operations I must refer you to the work itself; & only take notice that ~~all~~ every kind of bay salt is prepared without ^{artificial} heat, & by only exposing the brine under a large surface to the action of the sun & air, by which, in proportion to the strength of the brine & to the different temperature of climate & season, ^{the} salt crystallizes into what we call bay salt, & comes under different appearances to us from different places, ^{which arise principally from the} ~~according to~~ cleanliness of the artist.

Our author, when treating of white salt in general, acquaints us, that although salt is made, in warm climates, with the greatest ease & at the least expence by the heat of the sun, after the method already described; yet, in several countries, where bay salt might be ^{conveniently} made, they prepare all their ^{salt} ~~by boiling~~ culinary fires. Thus in Austria, Bohemia, & many other parts of Germany, & also in Hungary, ^{some parts of} Italy, they constantly boil the water of their salt springs into white salt. But in other parts of Europe, as in Britain, & in the northern parts of France & Germany, an erroneous opinion long prevailed, that the heat of the sun was not there sufficiently intense, even in the summer season, to

[as the author, being under no tie of secrecy, has revealed to us the method of making in Holland & Zealand that strong & pure kind of salt, with which they cure herrings, & all other provisions for long keeping; which gives the Dutch a great advantage over all other nations in the herring fishery; since fish preserved with this salt look much cleaner & fairer than those that are cured with bay salt, & keep much better than those preserved with any other kind of white salt.]

reduce seawater, or brine into bay salt. And all ~~arguments~~ arguments would probably have been insufficient to remove this prejudice from the English, had not the contrary been fully proved by experiments, which were first accidentally made in Hampshire. However, the method of making salt by coction will probably still continue to be practised in Britain; as the salt so prepared is for several uses preferable to bay salt, & when prepared after a particular manner, is preferable to common bay salt, even for curing provisions, as the practice of the Hollanders sufficiently testifies. So that the due & right preparation of white salt ~~seems~~ ^{seems} very deserving of the notice & regard of the public.

White salt, as it is prepared from various saline liquors, may therefore be distinguished into the following kinds.

1. Marine boiled salt, which is extracted from seawater by coction.
2. Brine or fountain salt, prepared by coction from natural brine, whether of ponds ~~or~~ ^{or} fountains.
3. ~~White salt~~ That prepared from seawater, or any other kind of salt water, first heightened into a strong brine by the heat of the sun, and the operation of the air.
4. That prepared from a strong brine or lixivium drawn from earth, sand, or stones impregnated with common salt.
5. Refined rock salt, which is boiled from a solution of fossil salt in sea water, or any other kind of salt water, or pure water.
6. Lastly, salt upon salt, which is bay salt dissolved in sea water, or any other salt water, & worth it boiled into white salt, & under these heads may be ranked the several kinds of boiled salt now in use.

Our author has given ^{us} an exact history of the manner of preparing these different kinds of salt, as practised in different places, with miscellaneous observations & cautions relating to their respective processes, for which ^{in the general} I must refer to the work itself. but ~~as~~ ^{as} the making salt ^{upon salt} deserves ^{particular} attention. In the process, whereby white salt is made from sea water by coction, it appears that sea water, besides common salt, contains

[Secondly, to make it of a small fine grain.]

several other ingredients; some of which are separated before the common salt falls; & others remain in the ~~sea~~ bittern, after the salt is extracted. Our author has given a full & circumstantial account of these, in an express chapter, under the appellation of Memoirs for an Analysis of Sea water.

The salt boilers, & particularly those who prepare brine salt, have long been accustomed to make use of various substances, which they call additions or Seasonings, & mix them with the brine while it is boiling, either when they first observe the salt begin to form, or else afterwards during the time of granulation. These additions, they use for various purposes. First, to make ^{the} salt grain better, or more quickly form into crystals. ~~Secondly~~, to make it of a large firm & hard grain, & less apt to imbibe the moisture of the air. Fourthly, to render it more pure. And lastly, to make it stronger & fitter for preserving provisions.

The additions most commonly used to answer the above mentioned purposes, are Wheat flower, rosin, butter, tallow, new ale, stale beer, bottoms or lees of ale & beer, wine lees, & allum. Wheat flower & rosin are used from the property they possess of making the salt of a small grain. Butter, tallow, and other unctuous bodies are commonly applied, as they are said to make the brine crystallize more readily; for which end some salt boilers more particularly prefer the fat of dogs. But others have little to plead for their using these substances, but immemorial custom. How far they have the effects ascribed to them, can only be determined by experiments, as several boilers, who formerly used them, now find they can make as good salt without them. Wine lees, new ale, stale ~~beers~~ ^{ale}, the lees of ale and beer are now generally rejected by the marine salt boilers, except in west of England, where the brewers, who use them, affirm that

they raise a large grain, & make their salt more hard & firm, & some say, that they make it crystallize more easily. Hoffman prefers the strongest ale, & Plot. assures us, that it makes the salt of a larger or smaller grain according to the degree of its staleness. The only good effects, that fermented liquors can have as an addition, are probably owing to their acid spirit, which may correct the alkaline salts of the brine, & render the common salt more dry & hard, & less apt to dissolve in moist air. If therefore it should be thought necessary to use any of these additions in order to correct the alkaline quality of the brine, stale ale, or Rhenish wine ought to be chosen, as new ^{ale} contains but little acid.

Allum is an addition long known & used in Cheshire, together with butter, to make the salt precipitate from some sorts of brine, as we are assured by Dr Leigh in his natural history of Lancashire, Cheshire &c, who first taught the Cheshire salt boilers the art of refining rock salt. As the bad properties of their salt proceeded from hard boiling, they found every method ineffectual, until they had recourse to a more mild & gentle heat. And as allum hath long been long dispersed amongst them, it is not likely that they found any extraordinary benefit from it; otherwise they would scarce have neglected it, & continued the use of butter. However Mr Lowndes hath lately endeavoured to revive its use; asserting that brine salt hath ever more two main defects, flakiness & softness; & to remedy these imperfections he tried allum, which fully answered every thing he proposed; for it restored the salt to its natural cubical shoot, & gave it a proper hardness, nor had it any bad effect whatever. But our author is of opinion, that whoever

considers the nature of allum will scarce expect such extraordinary effects from it. Neither does it here seem wanted; for the grains of common salt will always be sufficiently hard, and of their natural figure, large & so disposed to run by the moisture of the air, if formed by a gentle heat, & perfectly free from heterogeneous mixtures, so that the goodness of St Lowender's salt does not seem owing to the allum, with which it is mixed, but chiefly to the gentle heat used in its preparation.

The Dutch, who have long & shewn the greatest skill & dexterity in the art of boiling salt, make use of another addition, which they esteem the greatest secret of their art. This is whey, kept several years, till it is extremely acid, now first revealed by our author to the British saltboilers; but long held in great esteem by the Dutch, for the good effects it hath upon their salt; which it renders stronger, ~~and~~ more durable, & fitter to preserve herrings, & other provisions.

of different kinds &

Gray salt, as well as white salt, is possessed of different qualities; & with the different kinds of these provisions must be cured, according to the uses for which they are designed. The Dutch indeed use no salt for curing provisions besides their own refined ^{salt}. With it they can preserve flesh & fish of all kinds as well as with the strongest bay salt; and chuse to be at the expence of refining bay salt, rather than to defile their provisions with the dirt & other impurities, with which it commonly abounds.

Salt, esteemed the best for curing provisions, & for preserving them the longest time, is that which is the strongest & the purest; this may be known by the following characters. Viz, It is usually concreted into large grains or crystals, which are firm & hard, & in respect to those of other kinds of common salt, the most solid and ponderous; it is not disposed to grow moist in a moderately dry air, to which it has been exposed a considerable time; its colour is white, & somewhat diaphanous;

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it hath no smell; its taste is truly insurmountable, & more sharp
& pungent than that of other kinds of ^{common} salt. It has besides
these, several other distinguishing properties mentioned by our
author. The salts, which approach nearest to this degree of
perfection, are the best kinds of bay salt, & the strong, ^{Dutch} refined
salt; but most of ~~the~~ salt now made for sale is very far from
answering to these characteristics.

Having related the various methods of preparing salt that now
are in use, as far as they are come to our authors knowledge, it
appears; that this art ~~of making~~ ~~make~~ is not brought to such
perfection in the British dominions, as in several other
countries, the salt there prepared being unfit for preserving
many kinds of provisions. It remains now to shew, that
this want of strong salt of British Manufacture,
proceeds not from any defect in nature, but of art; & that
if proper skill & industry be used in the British dominions,
& due encouragement there given by the legislature, such
improvements may be made in this art, that not only
Great Britain, but Ireland also, & the British colonies in
America, may be supplied with salt of their own manufacture,
proper for curing all kinds of provisions, in quantity
sufficient for all their occasions, in quality equal if not
superior to any foreign salt now made, & at a moderate
price. These are truths, which the author hopes will appear
evident from the facts & reasonings contained under the
following propositions.

Lemma I.

The quantity of water which annually falls in rain,
snow, & hail, is very different in different parts of Great
Britain; there commonly falling almost double the quantity
on the western coasts, than falls on the eastern coasts
of that island.

Lemma II. The quantity of rain which falls in Lancashire,
during the four hottest months of the year, viz, May, June,
July, & August, doth not at a medium amount to more
than a third part of the quantity of water, which falls in rain,
snow, & hail, during the whole year.

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Lemma III. The water, which ascends in vapours from the sea, ^{very} greatly exceeds that which descends thereon in rain & other aqueous meteors: but the quantity of water, which usually exhales from a given part of the Ocean in a given time, cannot be with any exactness determined.

Lemma IV. The quantity of water which commonly exhales in Great Britain from shallow ponds during the four hottest months of the year, greatly exceeds the quantity of rain, which commonly falls on the surface of those ponds during the said months.

From these Lemmata, which the author has supported by the observations not only of himself, but of other learned men, are deduced the following propositions.

Propof. I. In several parts of England large quantities of bay salt may be extracted from sea water during the hottest months of the year, by receiving the salt water into ponds, & suffering its aqueous parts thence to exhale by the heat of the Sun, & the operation of the air & winds.

Propof. II. In several parts of England large quantities of bay salt may very commodiously be extracted from sea water, after the same manner that is practised in France & in other parts of Europe.

Propof. III. Bay salt may be extracted in England from sea water in larger quantities, & with more certainty than by the foregoing method, if care be taken to preserve the brine contained in the salt pits from being diluted with rains, & to promote the evaporation of the ~~sea~~ ^{brine} water by artificial means, which may easily be put in practice.

Propof. IV. In several parts of England large quantities of excellent bay salt may with great ease be made from the natural brine of salt springs, & also from rock salt dissolved in weak brine or sea water.

Propof. V. Bay salt may be prepared in England by the foregoing methods at a very moderate expence, equal in goodness to the best foreign bay salt, and in quantity sufficient for the consumption of all the British dominions.

Propos. VI. In several of the British colonies in America, bay salt might, with little expence and trouble, be prepared from sea water, in quantities sufficient to supply the American fisheries, & all other occasions of those colonies, so as to become a considerable branch of their trade.

The author has supported these propositions with great ingenuity, but I cannot pass over in silence the artificial means to promote the evaporation of sea water, mentioned in Propos. III, as well as ^{to} preserve the brine contained in the salt pits from being diluted with rains. I therefore shall lay before you a short account of these.

It will be proper, says our author, to make all the salt pits of the marsh, in one long row extended from east to west; & for each pit to make covers of thin boards, or rather of coarse canvas, or sail cloth, stretched on frames of wood & painted white. These covers must all be fixed with hinges to strong posts & beams on the north side of the pits; so that they may be let down & drawn up with cords & pulleys, or by some other contrivance somewhat like drawbridges. These covers thus fixed may be let down over the pits like a shed or penthouse in rainy weather; & in dry weather may be erected almost to a perpendicular, but inclining a little ~~down~~ towards the South; so as to form a wall with a south aspect. Thus these may serve a double purpose, as coverings for the pits in wet weather, & as reflectors of the sun's heat upon them in dry weather, & thus greatly promote the evaporation of the aqueous parts of the brine. The hinges on which the reflectors turn may be fixed about eight or ten inches from the ground; By which means, when the reflectors stand upright, there will be an opening left beneath them, through which the air will continually flow in a brisk current, & greatly increase the evaporation of the water.

After having gone through that part of Dr Brownrigg's work, which relates to bay salt, we proceed to the method that gentleman proposes for preparing ^{improving} white salt, ~~for preserving provisions~~

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which if brought into use, may probably be of advantage
not only to private undertakers, but also to the public. For it
appears, that two very different kinds of white salt are required,
the one for the use of the table, & the other as a condiment for
provisions. Its whiteness, dryness, & the smallness of its grain, are
the properties which chiefly recommend the first kind; and
its ^{great} strength & purity, the latter. It is this strong & pure kind
of ^{white} salt, which is wanted in the British dominions, & it
is therefore our author's principal design here to consider
how this defect may be supplied; although at the same
time instructions are given how to prepare table salt, not
only better in quality, but also at a less expence than it
is now prepared by the common method.

Lemma I. In the common processes for making white salt, the
salt is deprived of a considerable part of its acid
spirit by the violent boiling used in its preparation.

Lemma II. Most kinds of white salt are rendered impure
by the mixture of various heterogeneous substances.

Lemma III. White salt, by the violent coction commonly used
in its preparation, is rendered less fit for preserving
fish, flesh, & other provisions, than it would be if
prepared with a more gentle heat.

Lemma IV. The heterogeneous substances, which are
^{but} commonly mixed with white salt, render it less proper
for preserving provisions, than it would be if separated
from them.

After having fully considered the foregoing, our author gives
~~the~~ a method of preparing a kind of white salt proper for
curing fish, flesh, & other provisions; likewise a method of
refining salt; but for these I must refer you to the work
itself, as ^{well as} for the tables, where ⁱⁿ the several expences attending
these operations are minutely considered.

Most of the facts referred to in these disquisitions are such, as
the constant practice of those, who make salt, sufficiently
warrants us to rely upon for true & certain; or else, they are the

observations of judicious salt officers, daily conversant
 in these matters; ~~or~~ of curious & inquisitive navigators,
 merchants, travellers & naturalists; or lastly, the experiments
 of many learned physicians, chemists, & philosophers: the
 truth of which several facts, though many of them have
 long been published, hath never been called in question.
 So that these observations & experiments may probably be
 more relied on by the public, than if they had only been
 made by our author; since they have the testimony of many
 skilfull & unprejudiced persons, who could have no notion
 of the uses to which they have been here applied. If
 therefore the arguments founded upon those facts should
 be esteemed anyways reasonable & satisfactory, the author
 presumes to remark, that it might not be unworthy
 the wisdom of the British legislature to direct a more
 full inquiry to be made into a matter of this importance,
 & to order proper works to be erected for making bay salt, &
 for making & refining white salt; & to put those works
 under the management of able & judicious persons, to
 make ~~as~~ exact & accurate tryals, in order to discover
 the best & cheapest methods of doing them. And the
 methods, which should be most approved of, might for
 the general good be made public, & established by law,
 as a common standard, to which all those who make salt
 in the British dominions should be obliged to conform.

However imperfect this extract may appear, I must now
 beg your ~~for~~ indulgence for ^{having} ~~taking~~ ^{en} up more of your
 time than is usually allowed to works of this kind. I
 must plead in my excuse the great ^{the national} importance of the
 work itself, the masterly manner with which the
 subject matter is treated, as well as its falling in so
 exactly with ~~our~~ ^{that} institution, in which we are so desirous
 of distinguishing ourselves. The making & refining salt must
 certainly be considered as one of those mechanic arts, the

History of which, as we are taught by the noble ¹⁷Verulam,
is a necessary part of that knowledge, ~~and~~ ~~which~~
~~as a for life, can be said~~ that true Science of
Nature, which is not taken up in vain & fruitless
Speculations, but effectually labours to relieve the
necessities of human life.

* Note

Verulam de Aug Scient Lib. II. cap. 2.

June 16. 1748.

Watson's Acc^t. of
Dr. Brownrigg on
making of Salt.



AUTOGRAPHE

de

Watson

William

OBSERVATIONS

1.)

Maa.s. /am Titel/ 16 1/2 p.Fol.
o.O.u.D. /16.VI.1748/ Original-
manuskript von Watson's Auszug aus
dem berühmten Werke William Brown-
riggs /1711-1800/ „Art of making
common salt“ /London 1748/, den
derselbe auf Wunsch der Royal Soc.
von London ausgearbeitet hat. Das
Datum ist dem Indosso von Martin
Ffolkes, dem Vizepräsidenten der
Roy. Soc. auf der Rückseite des Ma-
nuscriptes zu entnehmen.

Etwa 2 Jahre später entdeckten
Watson und Brownrigg gemeinsam das
neue Metall Platin: „Several
papers concerning a new semi-metal,
called platina“ /1756/.

2.

L.a.s./Engl./2p.8.London, Monday
Sehr interessantes Schreiben ü-
ber Herschel: "Mr.Herschel was
half an hour with his Majesty Sa-
turday.The conversation rolled
chiefly on Astronomy and Music.
He gave Mr.Herschel no hint res-
pecting his succeeding the late
Dr.Demainsbray,- but invited him
to come as often as he pleased to
his private coming concerts." Er-
wähnt wird auch Maskelyne und Her-
schels Aspiration nach Greenwich.

Aus Sammlung Dr.K.Loewenfeld.

W A T S O N, William = Pharmazeut,
Arzt u. Physiker.

Geb. 1715, London.
Gest. 10. V. 1787, London.

Erst Apotheker, dann daneben Dr. Med.
und praktischer Arzt in London. Mit-
glied des Royal College of Physi-
cians, Vorsteher des Britischen Mu-
seums, seit 1741 Mitglied der Royal
Society, später auch zum Sir erhoben,
befasste sich eingehend, experimentel
und theoretisch mit Fragen der Ele-
trizität, deren Uebertragung und Ge-
schwindigkeit der Fortpflanzung, mit
dem Blitz und den Vorrichtungen zu
seiner Abwehr, ferner mit thermome-
trischen und meteorologischen Beob-
achtungen.



AUTOGRAPHE

de

Watson

William

OBSERVATIONS

L. A. S. (E) 2p. 8° London Handay

*Safe mit demselben Briefe an den Herrn
Schel. „Herrn Schel. nach dem Haus mit
der Majestät am Samstag. Die Conversation
betraf chiefly an Astronomie und Music.
Er gab M^r Herrschel no hint respecting his
succeeding the late Dr. Olmerstray —
but invited him to come as often as he plea-
sed to his private evening concerts.“
Edward Schel. und Mary Markelyne aus Gra-
ham's Aug. 2. 1748. Mary Greenwick.*

Miss Samuelling Dr. Koenigsfeld.

1./
Watson, William, Erst Apotheker, dann daneben Dr. Med. u pract. Arzt in London, Mitgl. der Rpyal College of Physicians, Vorsteher d. britischen Museums u. seit 1741 Mitgl. d. Roy. Society. — In späterer Zeit zum Sir erhoben/BD/.

geb. 1715. London,

gest. 1787, Mai 10, London.

Experiments and obss. on electricity, 8°, Lond. 1745. — Experiments and observations, tending to illustrate the nature and properties of electricity/Phil. Tr. 1745, 1746, 1747, et 1748/. Observation on Mr. Le Monier's memoir relating to the communicating the electric virtue to non-electrics/Ib. 1747/ — An account of the experiments made to discover, whether the electrical power, when the conductors of it were not supported by electrics per se, would be sensible at great distances, with an inquiry concerning the respective velocity of electricity and sound/Ib. 1747-48/. Of the experiments made by some Gentlemen of the Roy. Society to measure the absolute velocity of electric/Ib. 1748/. A letter from Mr. W. W. declaring he as many others have not been able



AUTOGRAPHE

de

Watson

William

OBSERVATIONS

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2. /
to make odours pass through a glass
by means of electricity etc./Ib.
1750/. On the phenomena of electrici-
ty in vacuo/Ib. 1751. A letter concer-
ning the electrical experiments
in England on thunder clouds/Ib.
1752/. A comparison of different
thermometrical observations in
Siberia/Ib. 1753/. Some observations
relating to the Lyncurium of the
ancients/Ib. 1759/. Some suggestions
concerning the preventing the
mischiefs, which happen to ships
and their masts by lightning/Ib.
1752/. Effects of elektricity ap-
plied to a Tetanus/Ib. 1763/. Obss.
on the effects of lightning, with
an account of the apparatus pro-
posed to prevent its mischiefs to
buildings etc./Ib. 1764/. Some ac-
count of the late cold weather/Ib.
1767/. -Medicinisches.

